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ORIGINAL ARTICLE

PROFILE OF PATIENTS AND FULLY IMPLANTED CENTRAL VENOUS CATHETERS OF AN ONCOLOGY HOSPITAL

PERFIL DOS PACIENTES E DOS CATETERES VENOSO CENTRAL TOTALMENTE IMPLANTADO DE UM HOSPITAL DE ONCOLOGIA

PERFIL DE LOS PACIENTES Y DE LOS CATÉTERES VENOSOS CENTRAL TOTALMENTE IMPLANTADO DE UN HOSPITAL DE ONCOLOGÍA

Alexei Rodrigues Gomes¹, Selma Petra Chaves Sá²

ABSTRACT

Objective: to draw the profile of patients and central venous catheters fully implanted in a Cancer Institution. **Method:** descriptive, cross-sectional study of quantitative approach. Data collection occurred through a form, in the operating room, in the days of implantation of catheters by the surgeons. Data were analyzed with descriptive statistics. The research project had the approval in the Committee of Ethics in Research, CAAE 08151212.8.0000.5274. **Results:** the male represented 51% of the cases, the predominant age group was from 18 years old (72%), the blood vessel with the highest number of implantation was the right subclavian vein (59%), the main indication of the catheter was the need to do chemotherapy (100%) and the 9.6 french catheter in circumference was the most chosen for implantation (80%). **Conclusion:** the information generated is to collaborate the institutions that make use of these devices in the planning and execution of actions involving the implantation and nursing care related to these. **Descriptors:** Delay Catheters; Oncologic Nursing; Health Profile.

RESUMO

Objetivo: traçar o perfil dos pacientes e dos cateteres venoso centrais totalmente implantados, em uma Instituição Oncológica. **Método:** estudo transversal, descritivo, de abordagem quantitativa. A coleta de dados ocorreu através de um formulário, no centro cirúrgico, nos dias de implantação dos cateteres pelos cirurgiões. Os dados foram analisados com estatística descritiva. O projeto de pesquisa teve a aprovação no Comitê de Ética em Pesquisa, CAAE 08151212.8.0000.5274. **Resultados:** o sexo masculino representou 51% dos casos, a faixa etária predominante foi a partir dos 18 anos (72%), o vaso sanguíneo com maior número de implantação foi a veia subclávia direita (59%), a principal indicação do cateter foi necessidade de fazer quimioterapia (100%) e o cateter de 9,6 french de circunferência foi o mais escolhido para implantação (80%). **Conclusão:** as informações geradas servem para colaborar as instituições que fazem uso destes dispositivos no planejamento e execuções de ações envolvendo a implantação e os cuidados de enfermagem relacionados a estes. **Descritores:** Cateteres de Demora; Enfermagem Oncológica; Perfil de Saúde.

RESUMEN

Objetivo: trazar el perfil de los pacientes y de los catéteres venosos centrales totalmente implantados en una Institución Oncológica. **Método:** estudio transversal, descriptivo, de enfoque cuantitativo. La colecta de datos fue a través de un formulario, en el centro quirúrgico, en los días de implantación de los catéteres por los cirujanos. Los datos fueron analizados con estadística descriptiva. El proyecto de investigación tuvo la aprobación en el Comité de Ética en Investigación, CAAE 08151212.8.0000.5274. **Resultados:** el sexo masculino representó 51% de los casos, el grupo de edad predominante fue a partir de los 18 años (72%), el vaso sanguíneo con mayor número de implantación fue la vena subclavia derecha (59%), la principal indicación del catéter fue necesidad de hacer quimioterapia (100%) y el catéter de 9,6 french de circunferencia fue el más escogido para implantación (80%). **Conclusión:** las informaciones generadas sirven para colaborar con las instituciones que hacen uso de estos dispositivos en el planeamiento y ejecuciones de acciones envolvendo la implantación y los cuidados de enfermería relacionados a estos. **Palabras clave:** Catéteres de Demora; Enfermería Oncológica; Perfil de Salud.

¹Nurse, Specialist in Oncology, Master degree, Professional Master Degree Program in Nursing Care /MPEA/EEAAC/UFF. Niterói (RJ), Brazil. E-mail: alexeirg@ig.com.br; ²Nurse, Doctorate Professor in Nursing / Holder, Nursing and Administration Fundaments Department, Nursing School Aurora de Afonso Costa/EEAAC/UFF. Niterói (RJ), Brazil. E-mail: spetra@ig.com.br

INTRODUCTION

The incidence of cancer grows in Brazil and in the world as the population aging resulting from the increase in life expectancy. In 2004, Brazil recorded 141000 cancer deaths; in males, the most common were lung, prostate and stomach cancer and in females the breast, lung and intestine cancer, if we exclude non-melanoma skin cancer.¹

In Brazil, estimates for the year 2014 suggest the occurrence of 576,580 new cancer cases, including cases of non-melanoma skin, reinforcing the magnitude of the problem of cancer in the country. The most incidents are non-melanoma skin cancers, prostate, lung, colon and rectum and stomach, for males; and for the females, the non-melanoma skin, breast, colon and rectum, cervix, lungs and thyroid gland.²

Most drug treatments for the various types of neoplastic diseases are made by injection, despite the existence of oral medications for these diseases. Due to the time of treatment, the endothelial caused by several of these drugs, in addition to the risk of tissue necrosis which can also occur in the event of extravasation to the subcutaneous region for some of them, it is usually indicated the implantation of central venous catheters. In addition to the administration of chemotherapy, this device can have other indications such as administration of blood products, parenteral nutrition, antibiotics, analgesics and the need of frequent blood sampling collection.³

Such devices can be of insertion into peripheral veins as the Peripherally Inserted Central Catheter (PICC) or insertion into deep veins as the Semi Implanted Central Venous Catheter (CVC-SI) and Total Implanted Central Venous Catheter (CVC TI).¹ Among these, the CVC TI have conquered more and more supporters, as it has the following advantages: the system is fully subcutaneous reducing the risk of infection, it minimizes the risk of thrombosis, easy puncture, it allows outpatient treatment, it is radiopaque, it does not interfere in the daily activities of the patient, it is esthetic and it preserves the peripheral venous system.⁴ The insertion of these devices takes place through a puncture or dissection of a deep vein as the internal jugular and subclavian veins, for example.

Although the central venous catheter can be used for infusion of blood and its derivatives, medications among other functions such as collecting materials for laboratory testing, the administration of chemotherapy was initiated from the 70s⁵

even with its risks, the benefits that they provided made this became increasingly popular in the decade of 80s from the introduction of the CVC TI in 1983 for cancer patients that would make use of antineoplastic agents in the course of their treatment.⁶

These catheters are not exempt of complications because they can occur from the moment of their implantation, like pneumothorax, hemothorax which are considered immediate and late complications even as infection, obstruction, fractures enabling extravasation of substances infused, catheter fragment embolism, although being considered rare it deserves to be recognized even in the asymptomatic patient.⁷

It is important to note that these devices require a handling performed by trained professionals and these need a monthly maintenance when they are not being used for infusions, namely when they are disabled and it is quite common to use a heparinized solution.⁸ This is a route of safe and permanent vascular access for years when handled by trained professionals.⁴

Published data recommend the saline solution to 0.9% for maintenance of central venous catheter, for not having clarity regarding the use of heparin to the detriment of this, to maintain them, from the evidence available, in addition to having a low cost and eliminate the incompatibilities with drugs and solutions used.⁹

This study aims to trace the profile of patients and total implanted central venous catheters in a Cancer Institution.

METHOD

Article elaborated from the dissertation << Volume difference present and required of solution for maintaining the total implemented central venous catheter and associated factors >> presented to Professional Master Degree Program in Nursing Care/MPEA of the Nursing School Aurora of Afonso Costa/EEAAC, from the Fluminense Federal University-UFF, Niterói-RJ, Brazil, 2013.

Cross-sectional study, descriptive of quantitative approach performed in a surgical center of a public hospital specializing in Oncology in Rio de Janeiro/RJ.

Data collection took place between January and May of 2013 at the surgical center in the days of implantation of catheters by the surgeons. A form with questions concerning the indication of the implantation of the catheter, the body region where this has been

implanted, the vessel of choice for such a procedure among others, plus chart data such as age, sex, among others. These data were collected through forms and crossed with the data collected in the operating room during the non-participant observation. The inclusion criterion was all CVC TI inserted in the operating room of the Hospital, in the period of the research.

Sample calculation was performed to identify the number of implantations to be accompanied for significance in the research, based on the proportion of surgeries performed in the hospital each month, adopting as 0.10-percentage error, which is established as the default for this analysis, significance 0.05, i.e. 95% confidence. It was set a minimum sample of seven cases for pediatric patients and forty-two for adult patients. The sample collected was sixty-nine cases given the statistical calculation.

In the analysis, we used the descriptive statistics for the characterization of the variables evaluated. A database was created in a spreadsheet in Excel® program, in which

occurred the distribution of implanted-related variables of CVC TI. The data were analyzed in the SAS 9.1.3 version software and these are presented in the form of simple frequency and percentage.

The research project had the approval on the Ethics and Research Committee of the National Cancer Institute, as the CAAE number 08151212.8.0000.5274.

RESULTS

Sixty-nine implantations CVC TI were accompanied during the months of March to May 2013, both in adult patients and in pediatric, for 23 days, with residence in the surgical center of 6 hours daily, totaling 138 hours of non-participant observation.

The table below illustrates the variables involved in the procedure, found in research during the period of development.

Table 1. Variables found in the study. Rio de Janeiro/RJ, 2013.

Variables	n	%
Sex		
Male	35	51
Female	34	49
Age Group		
Pediatric (untill 17 years old)	19	28
Adult (from 18 years old)	50	72
Blood vessel chosen for implantation		
Right subclavian vein	41	59
Other veins	28	41
Indication of the catheter implantation		
Need for chemotherapy treatment	69	100
Outside circumference of the catheter (French)		
9.6 French in circumference	55	80
Other circumferences	14	20

In patients who underwent implantation of CVC TI during the period of data collection, 51% were male, against 49% female.

There was a predominance of patients with the adult age group (72%), in relation to pediatric age group with number of implantation of this catheter, totaling 28% of cases.

In the case of blood vessel chosen for implantation of this catheter, the right subclavian vein predominated with 59% of cases, compared to the other as the left subclavian vein and femoral right and left external jugular among others totaling the other 41%. The implementation of this device was the need for venous chemotherapy treatment in 100% of cases.

The demanded one was the catheter that has the larger caliber (9.6 french) compared to others, this was chosen in 80% of cases, compared to 20% of other calibers chosen for the procedure.

DISCUSSION

The pediatric cancer, also known as Chindren-Tennager Cancer, is considered rare when compared to cancer in adults being between 2 to 3% of all malignant tumors, it must be studied separately from adult cancer due to differences in primary locations, different backgrounds and different histological clinical behaviors.¹⁰

Patients of this study that fit on pediatric corresponded to 28% of cases against 72% of cases which corresponded to adulthood. The age range between 51 and 60 years old was where the highest number of implantations of catheter were done, with 16 (32%), in the age group that corresponded to people over 60 years old and 14 (28%) with the highest incidence of new cases in the country, according to data from the Ministry of Health published in 2010.¹¹

The vessel of choice for implantation of CVC TI went to the right subclavian vein with 41 of the 69 cases (59%), this occurs due to the ease of access of this blood vessel compared to others.¹

Published data with 61 cases of implantation of catheters in children and adolescents, in 42 of them (68.9%), the first choice of insertion site were also the right subclavian vein.¹²

In relation to the indication of the catheter implantation, all 69 cases (100%) were due to the need for chemotherapy treatment, although there are other purposes like Hemo-transfusions, parenteral nutrition, for example, this catheter is still very suitable for processing with chemotherapeutic drugs as demonstrated previously in a similar study, where 29 such catheters were inserted, with 25 of them (86.3%) with indication of treatment used anti-neoplastic drugs.¹³

The characteristics that some chemotherapeutic drugs like vincristine, doxorubicin, among other features are some of the factors that favor the indication of such devices.¹⁴

The catheter with the largest number of choice for implantation has been the one having the largest french (caliber) available at the institution searched, i.e. 9.6 french in 55 cases, 80% of all catheters inserted in the period of the research. This choice favors both the infusion of chemotherapeutic drugs, such as blood collection and blood transfusions if necessary, because the literature recommends that the latter two procedures cited are made only on catheters above 3.8 french in order to avoid its obstruction.¹⁵ It is worth noting that, these procedures do occur on a daily basis of the institution search.

CONCLUSION

The variables used to describe the profile of patients that implant total implanted catheter at the institution are consistent with the literature found on the profile of patients with neoplasms in our country, keeping the proportions in relation to the size of the samples, research time and so on.

We draw attention to the indications of the implantation of this catheter in the institution that proved to be 100% exclusive to chemotherapeutic treatments, this may be indicated for other purposes, such as blood collection, blood transfusions, among others, as described previously.

In addition to draw the profile of users of catheters in this institution specialized in oncological treatment, this study

demonstrates that the profile found reflects the literature track for the country, reinforcing the character of reference in this mode of treatment that the institution has researched in the Brazilian scenario.

It is concluded that this information collaborates with this and other institutions that make use of these devices in the planning and execution of actions involving the implantation and nursing care related to the maintenance of these so they can be used in the best way possible, preventing early withdrawal of those and keep useful even when necessary.

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Gomes AR, Chaves SPS da et al.

Profile of patients and fully implanted central...

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Corresponding Address

Alexei Rodrigues Gomes
Rua Benjamin Constant 51-C / Ap. 405
Bairro Largo do Barradas
CEP 24110-002 — Niterói (RJ), Brazil